

# Source Water Assessment Program (SWAP) Report

## For

### Jam's Nursery/Uncle Ronnie's



Prepared by the  
Massachusetts Department of  
Environmental Protection,  
Bureau of Resource Protection,  
Drinking Water Program

Date Prepared:  
March 21, 2001

**Table 1: Public Water System (PWS) Information**

<i>PWS NAME</i>	Jam's Nursery/Uncle Ronnie's
<i>PWS Address</i>	351 South Street
<i>City/Town</i>	Berlin
<i>PWS ID Number</i>	2028008
<i>Local Contact</i>	Ronald Wheeler
<i>Phone Number</i>	(978) 838-2884

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	2028008-01G	100	412	Moderate

#### What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? inventory land uses within the recharge areas of all public water supply sources;
- ? assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? publicize the results to provide support for improved protection.

#### SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

## INTRODUCTION

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

#### Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

#### This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

## 1. DESCRIPTION OF THE WATER SYSTEM

#### The Well

The well for the facility is located in front of the on-site building. The water supply serves a day care facility and a small takeout restaurant. The well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 412 feet. The well is a bedrock well and has a depth of 250 feet. The well is drilled in a sand and gravel aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The water does not receive any treatment at the time of this report. For current information on monitoring results and treatment, please contact the Public Water Supplier for complete water quality and treatment information, contact information is listed above in Table 1.

### What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

### What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

## 2. DISCUSSION OF LAND USES IN THE PROTECTION AREAS

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate activities in Zone I;**
2. **A septic system;**
3. **Agricultural activities (Corn farm); and**
4. **Industrial manufacturing**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of at least one moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone I** – Currently, the well does not meet DEP's restrictions, which only allow for water supply related activities within Zone I. The facility's Zone I contains the on-site building, mini golf driving range, road, and parking areas. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

2. **Septic system** – The septic system for the site is located within the IWPA. The system is pumped regularly. The daycare center and restaurant staff should be trained on proper handling and disposal of hazardous materials.

3. **Agricultural land use** – A farm that grows corn is located within the IWPA of the well. The contaminants of most concern are pesticides and nitrates from the fertilizer that is applied on the crop land.

4. **Industrial land use** – A facility where cement bricks is made is located within the IWPA.

**Table 2: Table of Activities within the Water Supply Protection Areas**

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot, driveways, playground & road	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Industrial manufacturing	No	Yes	Moderate	Make cement bricks
Mini Golf Course	Yes	Yes	Moderate	Recreation
Septic System	No	Yes	Moderate	See septic systems brochure attached
Crop land	No	Yes	Moderate	Fertilizer storage & use, and pesticide storage and/or use

\* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/).

## Glossary

**Zone I:** The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

**IWPA:** A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

**Zone II:** The primary recharge area defined by a hydrogeologic study.

**Aquifer:** An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

**Hydrogeologic Barrier:** An underground layer of impermeable material that resists penetration by water.

**Recharge Area:** The surface area that contributes water to a well.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

## 3. PROTECTION RECOMMENDATIONS

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Jam's Nursery should review and adopt the following recommendations at the facility:

### Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements. Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying their system.
- ✓ Consider well relocation if Zone I threats cannot be mitigated. Please note that DEP permit approvals must be obtained prior to the installation of a new well.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

### Training and Education:

- ✓ Train staff on proper hazardous material use, transportation, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff.
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

### Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at <http://www.dep.state.ma.us/dep/bwp/dhm/dhmpubs.htm>

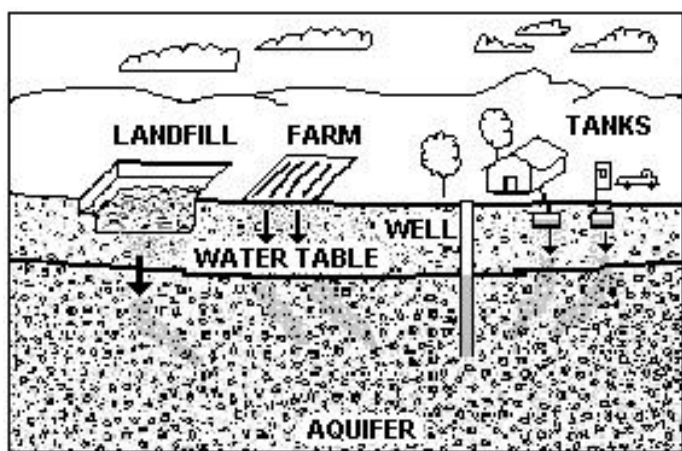


Figure 1: Example of how a well could become contaminated by different land uses and activities.

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.

### Planning:

- ✓ Work with local officials in Berlin to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

### **For More Information:**

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 5030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at:  
[www.state.ma.us/dep/brp/dws](http://www.state.ma.us/dep/brp/dws).

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

### **Agricultural**

- ✓ Encourage farmers in the IWPA to seek assistance from the Natural Resource Conservation Service (NRCS) in addressing fertilizer and pesticide management issues.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

## **5. ATTACHMENTS**

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet